

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A semiconductor laser device comprising:

a first mount;

a second mount formed by a heat sink having a heat conductivity of $500 \text{ W/(m}^*\text{K)}$ or more and joined to the first mount through a first multi-layer film including a gold thin film; and

a semiconductor laser element joined to the second mount through a second multi-layer film including a gold thin film, said semiconductor element having a diffraction grating, an emission edge, a reflection edge and an active layer positioned, ~~wherein said semiconductor laser element is configured~~ to output a laser beam having a plurality of oscillation longitudinal modes through the emission edge, and

the plurality of oscillation longitudinal modes are output in accordance with a wavelength selection characteristic of the diffraction grating formed between the emission edge and the reflection edge and nearby the active layer.

Claim 2 (Original): The semiconductor laser device according to claim 1, further comprising:

a third mount joined to the first mount through a third multi-layer film including a gold thin film; and

a temperature measuring element joined to the third mount through a fourth multi-layer film including a gold thin film and configured to measure a temperature of the semiconductor laser element.

Claim 3 (Original): The semiconductor laser device according to claim 2, wherein:
the second mount comprises diamond.

Claim 4 (Original): The semiconductor laser device according to claim 3, wherein:
the second mount is configured to minimize heat resistance relative to a
semiconductor laser element length, width and thickness.

Claim 5 (Currently Amended): The semiconductor laser device according to claim 4,
wherein:

the second mount has a thickness of at least 0.4 mm, a length of at least 3.2 mm and a
width of at least 3.2 mm when the semiconductor laser element is configured to have a
thickness of not more than 0.13 mm, a length of not more than 3.2 mm and a width not more
than of 0.35 mm.

Claim 6 (Currently Amended): The semiconductor laser device according to claim 4,
wherein:

the second mount has a thickness of at least 0.3 mm, a length of at least 2.7 mm and a
width of at least 1.0 mm when the semiconductor laser element is configured to have a
thickness not more than of 0.13 mm, a length of not more than 2.7 mm and a width of not
more than 0.35 mm.

Claim 7 (Original): The semiconductor laser device according to claim 3, wherein:
the second mount comprises a polycrystal diamond.

Claim 8 (Original): The semiconductor laser device according to claim 1, further comprising:

a temperature measuring element joined to the first mount through a third multi-layer film including a gold thin film and configured to measure a temperature of the semiconductor laser element.

Claim 9 (Original): The semiconductor laser device according to claim 8, wherein: the second mount comprises diamond.

Claim 10 (Original): The semiconductor laser device according to claim 9, wherein: the second mount is configured to minimize heat resistance relative to a semiconductor laser element length, width and thickness.

Claim 11 (Currently Amended): The semiconductor laser device according to claim 10, wherein:

the second mount has a thickness of at least 0.4 mm, a length of at least 3.2 mm and a width at least of 3.2 mm when the semiconductor laser element is configured to have a thickness not more than of 0.13 mm, a length of 3.2 mm and a width not more than of 0.35 mm.

Claim 12 (Currently Amended): The semiconductor laser device according to claim 10, wherein:

the second mount has a thickness of at least 0.3 mm, a length of at least 2.7 mm and a width of at least 1.0 mm when the semiconductor laser element is configured to have a

thickness of not more than 0.13 mm, a length of 2.7 mm and a width of not more than 0.35 mm.

Claim 13 (Original): The semiconductor laser device according to claim 9, wherein:
the second mount comprises a polycrystal diamond.

Claim 14 (Original): The semiconductor laser device according to claim 9, wherein:
the second mount is covered with a metallic foil including a gold thin film.

Claim 15 (Original): The semiconductor laser device according to claim 1, further
comprising:

a temperature measuring element joined to the second mount through a third multi-layer film including a gold thin film and configured to measure a temperature of the semiconductor laser element.

Claim 16 (Currently Amended): A semiconductor laser module comprising:
a semiconductor laser device having

a first mount,

a second mount formed by a heat sink having a heat conductivity of 500 W/(m*K) or more and joined to the first mount through a first multi-layer film including a gold thin film, and

a semiconductor laser element, ~~configured to emit laser beam having a plurality of oscillation longitudinal modes~~, joined to the second mount through a second multi-layer film including a gold thin film, and having a diffraction grating, an emission edge, a reflection edge and an active layer positioned to produce a laser

beam having a plurality of oscillation longitudinal modes that is emitted through said emission edge, wherein

the plurality of oscillation longitudinal modes are output in accordance with a wavelength selection characteristic of the diffraction grating formed between the emission edge and the reflection edge of the laser element and nearby the active layer of the laser element;

an optical fiber configured to guide the laser beam outside the module; and

an optical coupling lens system that couples the semiconductor laser device to the optical fiber.

Claim 17 (Original): The semiconductor laser module according to claim 16, further comprising

an isolator set in the optical coupling lens system and configured to suppress a return light reflected from an optical fiber side of the optical coupling lens system.

Claim 18 (Original): The semiconductor laser module according to claim 16, wherein:

the semiconductor laser device comprises a third mount joined to the first mount through a third multi-layer film including a gold thin film; and

a temperature measuring element joined to the third mount through a fourth multi-layer film including a gold thin film and configured to measure a temperature of the semiconductor laser element.

Claim 19 (Original): The semiconductor laser module according to claim 18, wherein:

the second mount comprises diamond.

Claim 20 (Original): The semiconductor laser module according to claim 19,
wherein:

the second mount is configured to minimize heat resistance relative to a
semiconductor laser element length, width and thickness.

Claim 21 (Currently Amended): The semiconductor laser module according to claim
20, wherein:

the second mount has a thickness of at least 0.4 mm, a length of at least 3.2 mm and a
width of at least 3.2 mm when the semiconductor laser element is used to have a thickness of
0.13 mm, a length of 1.5 mm and a width of 0.35 mm.

Claim 22 (Currently Amended): The semiconductor laser module according to claim
20, wherein:

the second mount has a thickness of at least 0.3 mm, a length of at least 2.7 mm and a
width of 1.0 mm when the semiconductor laser element is configured to have a thickness not
more than 0.13 mm, a length of 1.5 mm and a width of not more than 0.35 mm.

Claim 23 (Original): The semiconductor laser module according to claim 19,
wherein:

the second mount comprises a polycrystal diamond.

Claim 24 (Original): The semiconductor laser module according to claim 16,
wherein:

the semiconductor laser device comprises a temperature measuring element joined onto the first mount through a third multi-layer film including a gold thin film and configured to measure a driving temperature of the semiconductor laser element.

Claim 25 (Original): The semiconductor laser module according to claim 24, wherein: the second mount comprises diamond.

Claim 26 (Original): The semiconductor laser module according to claim 25, wherein:

the second mount is configured to minimize heat resistance relative to a semiconductor laser element length, width and thickness.

Claim 27 (Currently Amended): The semiconductor laser module according to claim 26, wherein:

the second mount is configured to have a thickness of at least 0.4 mm, a length of at least 3.2 mm and a width of at least 3.2 mm when the semiconductor laser element is configured to have a thickness of not more than 0.13 mm, a length of 3.2 mm and a width of not more than 0.35 mm.

Claim 28 (Currently Amended): The semiconductor laser module according to claim 26, wherein:

the second mount is configured to have a thickness of at least 0.3 mm, a length of at least 2.7 mm and a width of at least 1.0 mm when the semiconductor laser element is configured to have a thickness of not more than 0.13 mm, a length of 2.7 mm and a width not more than of 0.35 mm.

Claim 29 (Original): The semiconductor laser module according to claim 25,
wherein:

the second mount comprises a polycrystal diamond.

Claim 30 (Original): The semiconductor laser module according to claim 25,
wherein:

the second mount is covered with a metallic foil including a gold thin film.

Claim 31 (Original): The semiconductor laser module according to claim 16,
wherein:

the semiconductor laser device further comprises a temperature measuring element
joined onto the second mount through a third multi-layer film including a gold thin film and
configured to measure a driving temperature of the semiconductor laser element.

Claim 32 (Original): A semiconductor laser device comprising:

a first mount;

a second mount formed by a heat sink having a heat conductivity of $500 \text{ W}/(\text{m} \cdot \text{K})$ or
more and joined onto the first mount through a first multi-layer film including a gold thin
film;

a semiconductor laser element joined onto the second mount through a second multi-
layer film including a gold thin film;

means for outputting a laser beam having a plurality of oscillation longitudinal modes
in accordance with a wavelength selection characteristic of a diffraction grating formed

between an emission edge and a reflection edge of the laser element and nearby an active layer of the laser element; and

means for suppressing a deterioration of optical output and service life of the semiconducting laser element, including

means for measuring a temperature of the semiconductor laser element, and

means for controlling the temperature of the semiconductor laser element.

Claim 33 (Original): A semiconductor laser module comprising:

a semiconductor laser device configured to emit a laser beam and having

a first mount,

a second mount formed by a heat sink having a heat conductivity of 500 W/(m*K) or more and joined onto the first mount through a first multi-layer film including a gold thin film, and

a semiconductor laser element joined onto the second mount through a second multi-layer film including a gold thin film;

an optical fiber for guiding the laser beam outside the module;

an optical coupling lens system for optically coupling the semiconductor laser device with the optical fiber;

means for outputting a laser beam having a plurality of oscillation longitudinal modes in accordance with a wavelength selection characteristic of a diffraction grating formed between an emission edge and a reflection edge of the laser element and nearby an active layer of the laser element;

means for measuring a temperature of the semiconductor laser element; and

means for controlling the temperature of the semiconductor laser element.

IN THE DRAWINGS

Please enter new drawings Fig. 6A-6B filed herewith.

Attachments: New Drawings 6A-6B.